and copper at *b* and *c,* will be an amount of force in the opposite direction=io. Thus, if it were potassium, its contact force at *b* might be 5 —**, but then its contact force at *c* would be -^—15: or if it were gold, its contact force at *b* might be -<—-19, but then its contact force at *c* would be 9 —>. This is a very large assumption, and that the theory may agree with the facts is necessary: still it is, I believe, only an assumption, for I arn not aware of any data, independent of the theory in question, which prove its truth.

798. On the other hand, it is assumed that fluid conductors, and such bodies as contain water, or, in a word, those which I have called electrolytes (400, 558, 656), either exert no contact force at their place of contact with the metals, or if they do exert such a power, then it is with this most important difference, that the forces are not subject to the same law of compensation or neutralisation in the complete circuit, as holds with the metals (797). But this, I think I am justified in saying, is an assumption also, for it is supported not by any independent measurement or facts (796), but only by the theory which it is itself intended to support.

799. Guided by this opinion, and with a view to ascertain what is, in an active circle, effected by contact and what by chemical action, I endeavoured to find some bodies in this latter class (798), which should be without chemical action on the metals employed, so as to exclude that cause of a current, and yet such good conductors of electricity as to show any currents due to the contact of these metals with each other or with the fluid: concluding that any electrolyte which would conduct the thermo current of a single pair of bismuth and antimony plates would serve the required purpose, I sought for such, and fortunately soon found them.

If i. *Exciting Electrolytes, etc., being Conductors of Thermo and Feeble Currents*

800. *Sulphuret of potassium.*—This substance and its solution were prepared as follows. Equal weights of caustic potash (potassa fusa) and sulphur were mixed with and heated gradually in a Florence flask, till the whole had fused and united, and the sulphur in excess began to sublime. It was then cooled and dissolved in water, so as to form a strong

solution, which by
standing became quite clear.

801. A portion of this solution was included in a circuit
containing a galvanometer and a pair of antimony
and bismuth